COMMENTARY ON GASP OBJECTION TO "REUSING" QUENCH WATER AT CLAIRTON WORKS, USS.

1. Quench Tower Operation.

Typically 10 to 15 tons of hot (2000+°F) coke are sprayed by 4,000 to 6,000 gal of quench water every 10 to 15 minutes; the quenching of each load takes 1.5 to 2.5 minutes. During each quenching cycle the incandescent coke quickly cooled to about 250°F.

In the process, 1,000 to 1,500 gal of quenching water are lost to the atmosphere due to evaporation. Most of the remaining water runs off the coke and back to the sump through a return ditch. An analysis of the water mass balance indicates that small amounts are carried out with the coke and are lost through evaporation from the sump and spray header tank. There is usually no quenching wastewater, because the water used is recycled to extinction.

It has been a common practice in the U.S. steel industry to utilize the contaminated process wastewater from accompanied by-product recovery plants as a convenient source of the make-up water supply for quenching operations.

2. Environmental Impact.

It has been demonstrated that two major sources of organic matter found in coke quench tower emissions are contaminated quenching make-up water and "green" coke. The organic matter is trapped in the coke when the process of thermal distillation has not been completed and the coke is "green".

The quality of water used for quenching is one of the specific factors which affects emission rate, chemical composition, and associated health hazards. The phrase "...the water used for such quenching [shall be] equivalent to, or better than,... in the nearest stream or river..." in the Allegheny County SIP (Article XX, Section 520) refers to the spraying coke with water containing low Total Dissolved Solids (on the order of 750 mg/l) concentrations and mixed with "clean" make-up water of the same quality as is dischargeable to the nearest river.

3. Discussion.

The GASP's suggestion that "...used water should be [after each quench] piped off..." and replenished with 100% new river or better quality water is contradicted with industry standard practice, provided very little environmental benefit (if any) at a greatly increased cost, and, probably, not enforceable due to the lack of pertinent regulations.

It should also be noted, that implementation of the GASP's proposal would be in conflict with EPA's Pollution Prevention Program which calls for recycling of the hazardous materials to the greatest extent possible.

Coke Ovens (Cont'd)

E. **Offtake Piping.** No person shall operate, or allow to be operated, any battery of coke ovens in such manner that, at any time, there are visible emissions from more than five percent (5%) of the offtake piping on the operating coke ovens of such battery.

F. **Pushing.** No person shall operate, or allow to be operated, any battery of coke ovens unless there is installed on such battery a pushing emission control device which is designed to reduce fugitive emissions from pushing to the minimum attainable through the use of Best Available Control Technology, nor shall any person operate, or allow to be operated, any battery of coke ovens in such manner that:

1. At any time, the particulate mass emission rate from the pushing emission control device exceeds a rate determined by an outlet concentration of 0.020 grains per dry standard cubic foot, or the rate determined by the following formula, whichever is greater:

$A = 0.76W^{0.42}$ where A = allowable mass emission rate in pounds per hour per battery, and W = actual coke pushing rate in tons of coke per hour per battery;

2. Fugitive pushing emissions or emissions from the pushing emission control device outlet equal or exceed No. 1 on the Ringelmann Scale or equivalent opacity at any time, except if the Director determines in writing, upon written application from the person responsible for the coke ovens setting forth all information needed to make such determination, that such emissions are of only minor significance with respect to causing air pollution and do not prevent or interfere with the attainment or maintenance of any ambient air quality standard (any such determination shall be submitted as a proposed revision to Allegheny County's portion of the Pennsylvania Implementation Plan); or,

3. Visible emissions from the transport of hot coke in the open atmosphere exceed ten percent (10%) opacity at any time.

G. **Combustion Stacks.** No person shall operate, or allow to be operated, any battery of coke ovens in such manner that, at any time, emissions from the combustion stack serving such battery:

1. Exceed a particulate concentration of 0.030 grains per dry standard cubic foot;

2. Equal or exceed No. 1 on the Ringelmann Scale or an equivalent opacity for a period or periods aggregating in excess of three (3) minutes in any sixty (60) minute period; or,

3. Equal or exceed No. 3 on the Ringelmann Scale or an equivalent opacity.

H. **Quenching.** No person shall quench, or allow the quenching of, coke unless the emissions from such quenching are vented through a baffled quench tower and the water used for such quenching is equivalent to, or better than, the water quality standards established for the nearest stream or river by regulations promulgated by the Department of Environmental Resources under the Pennsylvania Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. 691.1 et seq., except that water from the nearest stream or river may be used for the quenching of coke.

I. **Measurements.** Measurements of coke oven emissions shall be performed according to the applicable procedures established by Section 607 of this Article. Measurements of water quality shall be performed according to procedures established or approved by the Department of Environmental Resources.

expert witness fees) to the party or parties against whom such action was brought in any case where the court finds that such action was unreasonable.

The ACHD Article XX contains the relevant SIP provisions limiting the emission of raw COG to the atmosphere and the quenching of hot coke with dirty water. Those provisions are set forth below in pertinent part:

Section 520 Coke Ovens

H. Quenching. No person shall quench, or allow the quenching of, coke unless the emissions from such quenching are vented through a baffled quench tower and the water used for such quenching is equivalent to, or better than, the water quality standards established for the nearest stream or river by regulations promulgated by the Department of Environmental Resources under the Pennsylvania Clean Stream Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. 691.1 et seq., except that water from the nearest stream or river may be used for the quenching of hot coke.

Section 530 Coke Oven Gas

Except as provided for in Section 520 of this Article, no person shall operate, or allow to be operated, any source in such manner that unburned coke oven gas is emitted into the open air.

III. DESCRIPTION OF DEFENDANT

A. Description of defendant

USX Corporation consists of the following operating units: USS (the nation's largest steel producer at 11.5 million tons in 1987), Marathon Oil (an integrated oil company), Texas Oil & Gas (a producer of natural gas) and U.S. Diversified Group (chemical manufacturing and transportation). U.S. Steel changed its name to USX in 1986 to reflect its move into the oil business. Oil industry activities account for more than 50% of revenues of USX. U.S. Steel acquired Marathon Oil Co. in 1982, and Texas Oil and Gas Corporation in 1986. In 1988, USX's sales consisted of refined products (50%), crude oil and condensate (10%), natura.

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FOR IMMEDIATE RELEASE:

USX AGREES TO PAY $1.8 MILLION TO SETTLE CLEAN AIR ACT VIOLATIONS

PHILADELPHIA - The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice today lodged a consent decree negotiated with USX Corporation (USX) for violations of the Clean Air Act (CAA) at USX' Clairton Coke Works in Clairton, Pennsylvania. USX has agreed to pay a settlement penalty of $1.8 million. The consent decree is subject to a 30-day public comment period and court approval prior to being filed with the court. The Pennsylvania Department of Environmental Resources and Allegheny County intervened as plaintiffs in this lawsuit and participated fully in the litigation.

The settlement penalty resolves violations of Pennsylvania's State Implementation Plan (SIP), as well as violations, occurring up to June 30, 1992, of an existing consent decree entered in 1988.

In accordance with the CAA, states were required to promulgate EPA-approved SIPs containing regulations for achieving National Ambient Air Quality Standards (NAAQS) for

(more)

USX settles Clairton clean air case

By Matthew P. Smith
Post-Gazette Staff Writer

USX Corp. has agreed to pay $1.8 million in penalties for violating federal air emission standards at its Clairton Coke Works and to meet stricter air and water pollution standards under terms of a federal consent decree with the U.S. Justice Department.

The consent decree, filed yesterday in U.S. District Court for Western Pennsylvania, effectively settles two pending civil lawsuits gainst the company stemming from violations of the federal Clean Air Act and a previous consent decree.

The latest consent decree is subject to a 30-day public comment period before it becomes official, said assistant U.S. District Attorney Jed Schollaert, who negotiated the settlement along with the state Department of Environmental Resources and the Allegheny County Health Department.

USX will pay $600,000 each to the federal government, DER and Allegheny County under terms of the settlement, Schollaert said.

USX will pay $600,000 each to the federal government, DER and Allegheny County.

In addition to the penalty, USX agreed to reduce emissions of air and water contaminants at the Clairton Works, and two other Mon Valley steel operations, the Edgar Thomson plant in Braddock and the Irvin plant in West Mifflin.

The agreement requires USX to meet more stringent standards to control emissions from coke oven doors and the sulfur dioxide content of coke oven gases, EPA officials said.

DER officials said they were happy with the proposed settlement. "We think it's a very positive agreement," said DER spokeswoman Betsy Mallison. "When we receive large payments like this from a company like USX, it can have an affect on other companies. We think companies will be more diligent in the future about meeting these standards."

The $600,000 penalty USX pays to DER will go into the state's Clean Air Fund, Mallison said.

Dr. Charles G. Carson, vice president of environmental affairs for U.S. Steel, said most of the violations cited in the consent decree took place between 1987 and 1990.

In 1991, the U.S. sued USX in U.S. District Court in Pittsburgh for violating air and water standards. USX was charged with releasing raw coke oven gas into the air during numerous venting incidents between 1987 and 1990. The company also was charged with quenching hot coke with contaminated water during the same period.

During that time, Carson said, the company spent $140 million on new equipment and employee training to minimize pollution control problems.

"Overall, we've invested more than $250 million in environmental controls at Clairton. The plant is considered the most environmentally progressive coke plant in the industry," Carson said.

Major causes of the venting incidents in 1987 and 1988 were corrected by installation of back-up electrical and mechanical systems to minimize risk of equipment failure, Carson said.

In addition, the plant installed coke battery igniters, which burn up coke oven gas rather than release it to the atmosphere.

The consent decree does not require USX to install any additional environmental equipment at the Clairton Works. Carson said the combination of improved equipment, operating practices and employee training will enable Clairton to meet the tighter standards.